

**CLAIMS**

5           1. A method of transcoding a digital signal encoded according to a first encoding mode into a digital signal encoded according to a second encoding mode, the second encoding mode comprising a bit rate-distortion allocation of the encoded digital signal,

characterized in that it comprises the steps of:

10          - obtaining (S2) at least a first parameter of encoding the signal according to the first mode,

              - obtaining (S7) at least a second parameter from an at least partial encoding (S4, S5, S6) of the signal according to the second mode,

15          - selecting (S8) a bit rate-distortion allocation mode for the encoding of the signal according to the second mode, as a function of the first and second parameters.

20          2. A transcoding method according to claim 1, characterized in that the first parameter (S2) is the bit rate of the signal encoded according to the first encoding mode.

25          3. A transcoding method according to claim 1 or 2, characterized in that the second parameter (S7) is the maximum bit rate of the signal encoded according to the second encoding mode.

              4. A method of transcoding according to claim 3, characterized in that the selection (S8) of a bit rate-distortion allocation mode for the encoding of the signal according to the second mode comprises the steps of:

30          - comparing (S80, S800) a fraction of the bit rate of the signal encoded according to the first encoding mode with the maximum bit rate of the signal encoded according to the second encoding mode,

- selecting (S81, S801) the maximum bit rate of the signal encoded according to the second encoding mode, as target bit rate of the allocation mode, if the maximum bit rate of the signal encoded according to the second encoding mode is less than the fraction of the bit rate of signal encoded  
5 according to the first encoding mode.

5. A method of transcoding according to claim 3, characterized in that the selection of a bit rate-distortion allocation mode for the encoding of the signal according to the second mode comprises the steps of:

10 - comparing (S80, S800) a fraction of the bit rate of the signal encoded according to the first encoding mode with the maximum bit rate of the signal encoded according to the second encoding mode,

15 - selecting (S83, S803) the fraction of the bit rate of the signal encoded according to the first encoding mode, as target bit rate of the allocation mode, if the maximum bit rate of the signal encoded according to the second encoding mode is greater than the fraction of the bit rate of signal encoded according to the first encoding mode and if a quantization parameter of the first encoding mode is less than a predetermined threshold.

20 6. A method of transcoding according to claim 3, characterized in that the selection of a bit rate-distortion allocation mode for the encoding of the signal according to the second mode comprises the steps of:

25 - comparing (S80, S800) a fraction of the bit rate of the signal encoded according to the first encoding mode with the maximum bit rate of the signal encoded according to the second encoding mode,

30 - selecting (S84, S804) a predetermined distortion as target distortion of the allocation mode, if the maximum bit rate of the signal encoded according to the second encoding mode is greater than the fraction of the bit rate of signal encoded according to the first encoding mode and if a quantization parameter of the first encoding mode is greater than a predetermined threshold.

7. A method of transcoding according to any one of claims 1 to 6, characterized in that the first encoding mode is an encoding according to the JPEG standard.

5           8. A method of transcoding according to any one of claims 1 to 7, characterized in that the second encoding mode is an encoding according to the JPEG2000 standard.

10         9. A device for transcoding a digital signal encoded according to a first encoding mode into a digital signal encoded according to a second encoding mode, the second encoding mode comprising a bit rate-distortion allocation of the encoded digital signal,

characterized in that it comprises:

15         - means (101) for obtaining at least a first parameter of encoding the signal according to the first mode,

              - means (102) for obtaining at least a second parameter from an at least partial encoding of the signal according to the second mode,

20         - means (103) for selecting a bit rate-distortion allocation mode for the encoding of the signal according to the second mode, as a function of the first and second parameters.

10. A transcoding device according to claim 9, characterized in that it is adapted to implement a first parameter which is the bit rate of the signal encoded according to the first encoding mode.

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11. A transcoding device according to claim 9 or 10, characterized in that it is adapted to implement a second parameter which is the maximum bit rate of the signal encoded according to the second encoding mode.

30         12. A transcoding device according to claim 11, characterized in that the means (103) for selecting a bit rate-distortion allocation mode for the encoding of the signal according to the second mode comprise:

- means for comparing a fraction of the bit rate of the signal encoded according to the first encoding mode with the maximum bit rate of the signal encoded according to the second encoding mode,
  - means for selecting the maximum bit rate of the signal encoded
- 5 according to the second encoding mode, as target bit rate of the allocation mode, if the maximum bit rate of the signal encoded according to the second encoding mode is less than the fraction of the bit rate of signal encoded according to the first encoding mode.
- 10 13. A transcoding device according to claim 11, characterized in that the means (103) for selecting a bit rate-distortion allocation mode for the encoding of the signal according to the second mode comprise:
- means for comparing a fraction of the bit rate of the signal encoded according to the first encoding mode with the maximum bit rate of the signal
- 15 encoded according to the second encoding mode,
- means for selecting the fraction of the bit rate of the signal encoded according to the first encoding mode, as target bit rate of the allocation mode, if the maximum bit rate of the signal encoded according to the second encoding mode is greater than the fraction of the bit rate of signal encoded according to
- 20 the first encoding mode and if a quantization parameter of the first encoding mode is less than a predetermined threshold.
14. A transcoding device according to claim 11, characterized in that the means (103) for selecting a bit rate-distortion allocation mode for the
- 25 encoding of the signal according to the second mode comprise:
- means for comparing a fraction of the bit rate of the signal encoded according to the first encoding mode with the maximum bit rate of the signal encoded according to the second encoding mode,
  - means for selecting a predetermined distortion as target distortion
- 30 of the allocation mode, if the maximum bit rate of the signal encoded according to the second encoding mode is greater than the fraction of the bit rate of signal

encoded according to the first encoding mode and if a quantization parameter of the first encoding mode is greater than a predetermined threshold.

15. A transcoding device according to any one of claims 9 to 14,  
5 characterized in that it is adapted to implement a first encoding mode which is an encoding according to the JPEG standard.

16. A transcoding device according to any one of claims 9 to 15,  
characterized in that it is adapted to implement a second encoding mode which  
10 is an encoding according to the JPEG2000 standard.

17. A transcoding device according to any one of claims 9 to 16,  
characterized in that the means for obtaining and selecting are incorporated in:  
- a microprocessor (100),  
15 - a read only memory (102), comprising a program for processing the data, and  
- a random access memory (103) comprising registers adapted to record variables modified during the execution of said program.

20 18. An apparatus (10) for processing a digital image, characterized in that it comprises means adapted to implement the method according to any one of Claims 1 to 8.

25 19. An apparatus (10) for processing a digital image, characterized in that it comprises the device according to any one of Claims 9 to 17.

20. Storage medium storing a program for implementing the method according to any one of Claims 1 to 8.

30 21. Storage medium according to claim 20, characterized in that said storage medium is detachably mountable on a device according to any one of Claims 9 to 19.

22. Storage medium according to claim 20 or 21, characterized in that said storage medium is a floppy disk or a CD-ROM.

5        23. Computer program on a storage medium and comprising computer executable instructions for transcoding a digital signal according to any one of claims 1 to 8.